



# **Investigating the Difficulties in Aesthetic Pollution Assessment by Means of Experimental Economics**

**F.A. BATZIAS, O.N. KOPSIDAS**

**Department of Industrial Management & Technology**

**University of Piraeus**

**80 Karaoli & Dimitriou Str., 18534 Piraeus**

**GREECE**

**[fbatzi@unipi.gr](mailto:fbatzi@unipi.gr)**

# Introduction

- The difficulties in aesthetic pollution assessment arise from the fact that this kind of pollution cannot be defined in an ambiguous way.
- Moreover, the same object may be considered by some as contributing to the beauty while others may feel uncomfortable when looking at it.
- Economic interests play, also, a role in this dispute.
- For example, some may find advertisements in the streets to have certain aesthetic value.

## Graffiti artwork in the city of Athens



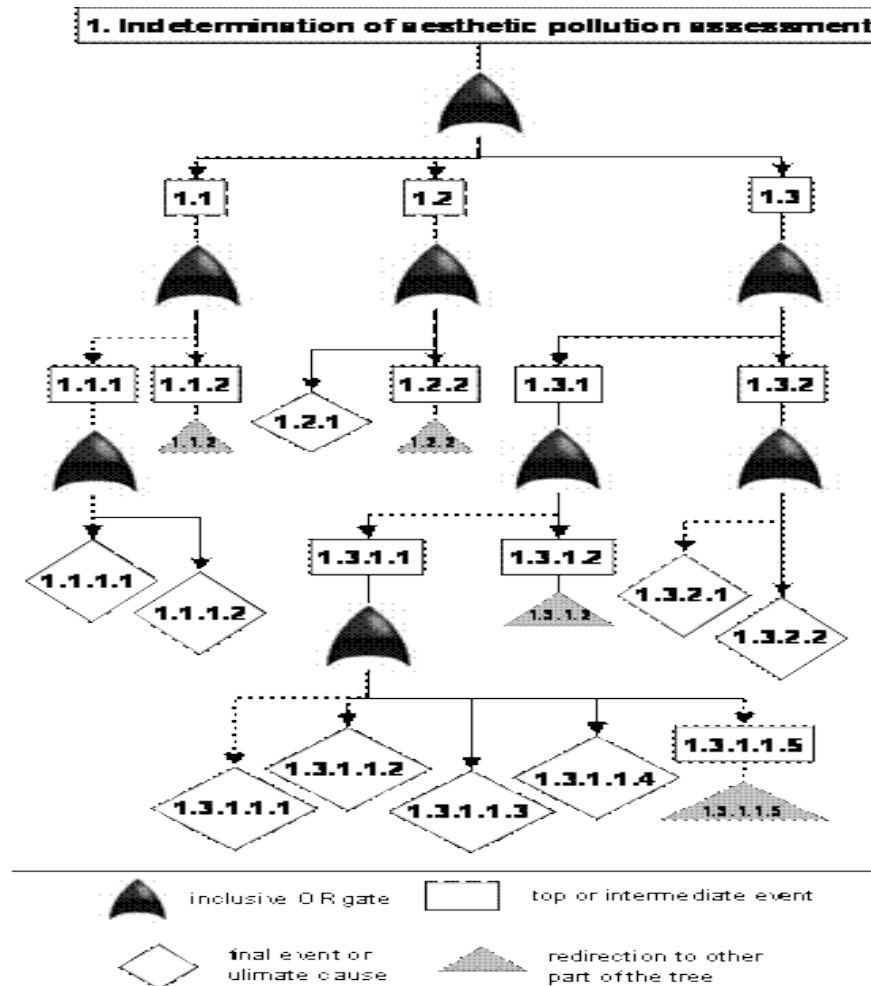
# Aesthetic pollution

- The top photo presents illegal graffiti painted on the ancient **Cononian Walls** that surround the peninsula of Piraeus, the main port of Athens, Greece.
- The photo in the middle shows a graffiti painted on the wall of a **private house** in the old quarters of Athens, although not permitted by city's regulations.
- The last photo presents graffiti painted on the wall of the old **Gas Factory** (nowadays serving as a cultural centre) by artists selected and paid by the Athens Municipal Office.

# Aesthetic pollution

- For investigating the difficulties in aesthetic pollution assessment, we have adopted the **Contingent Valuation Method (CVM)**,
- which is a basic technique of the newly established domain of **Experimental Economics**.
- This technique is subjective on its grounds, trying to obtain objectivity by extracting opinion/attitude and information/knowledge from a representative sample of interviewees, who are asked to assign a value on a **non-marketable**

# Methodology



# Implementation

- The methodology described above
- CVM-based questionnaire, enhanced with the corresponding FTA has been implemented in the case of Elefsina, a small industrial city between Athens and Corinth, in Greece
- best known for as the site of the ‘Eleusinian Mysteries’, one of the most famous events of the ancient Greek religion
- and the birth place of Aeschylus, one of the three great tragedians of antiquity. Nowadays
- Elefsina is a major industrial centre with establishments that contribute to aesthetic degradation/damage of the archaeological site.

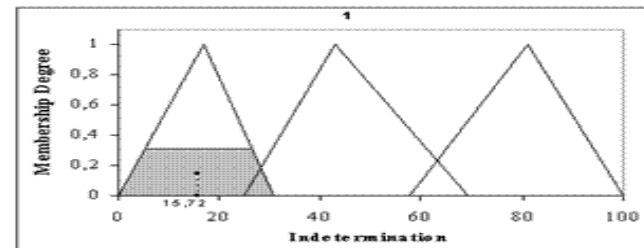
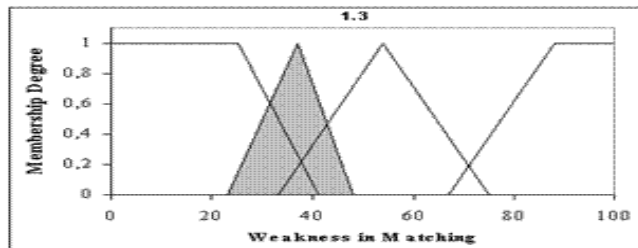
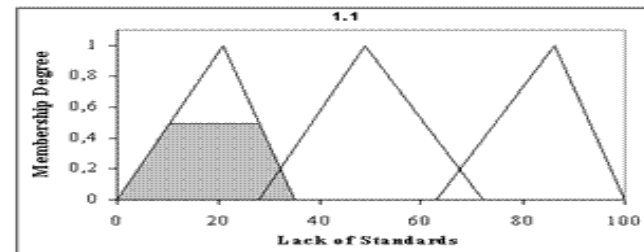
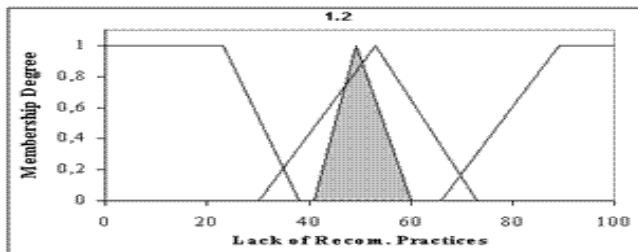
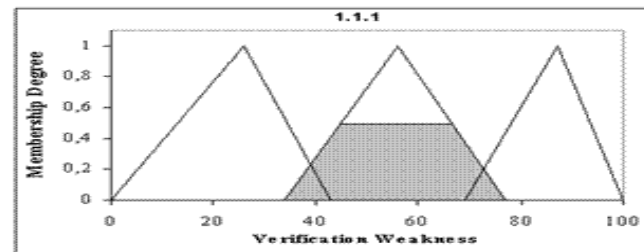
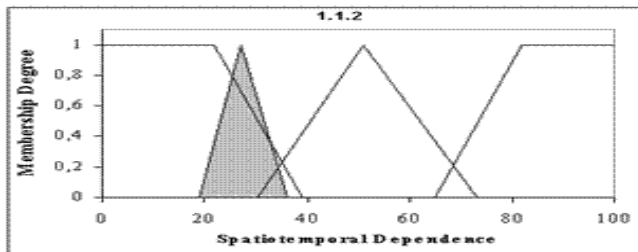
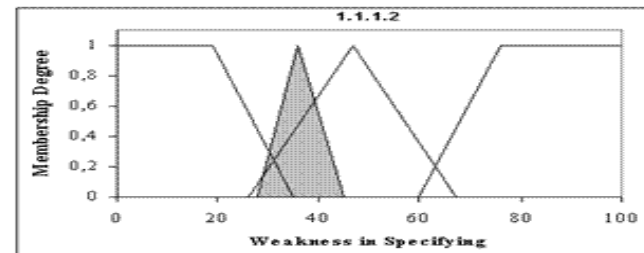
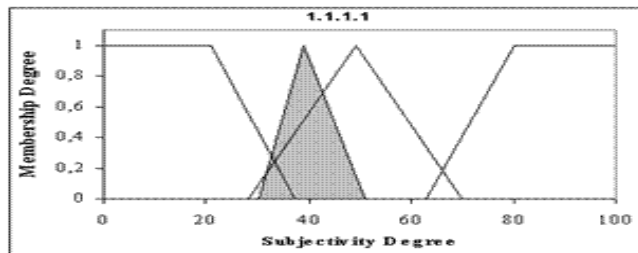


The industrial establishments near the archaeological site of Elefsina  
(three chimneys are shown in the back) contribute to the aesthetic  
degradation of the site.



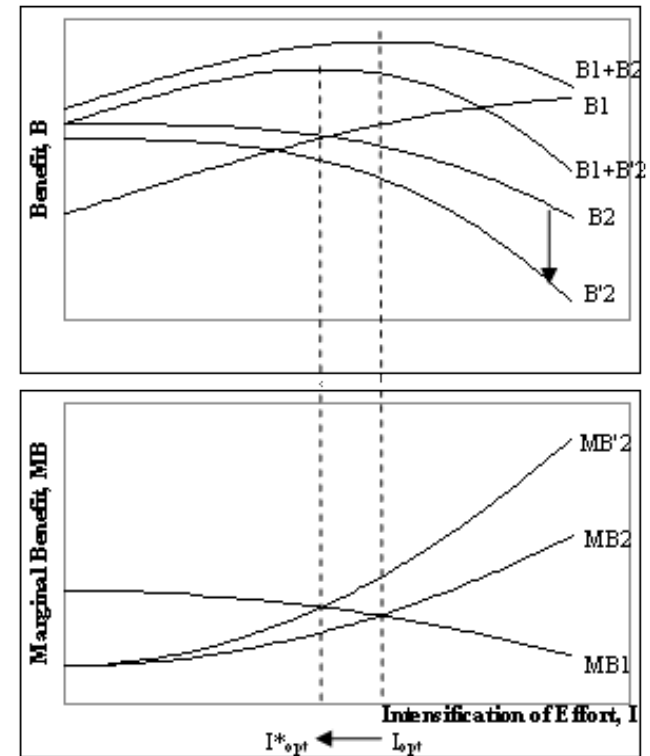
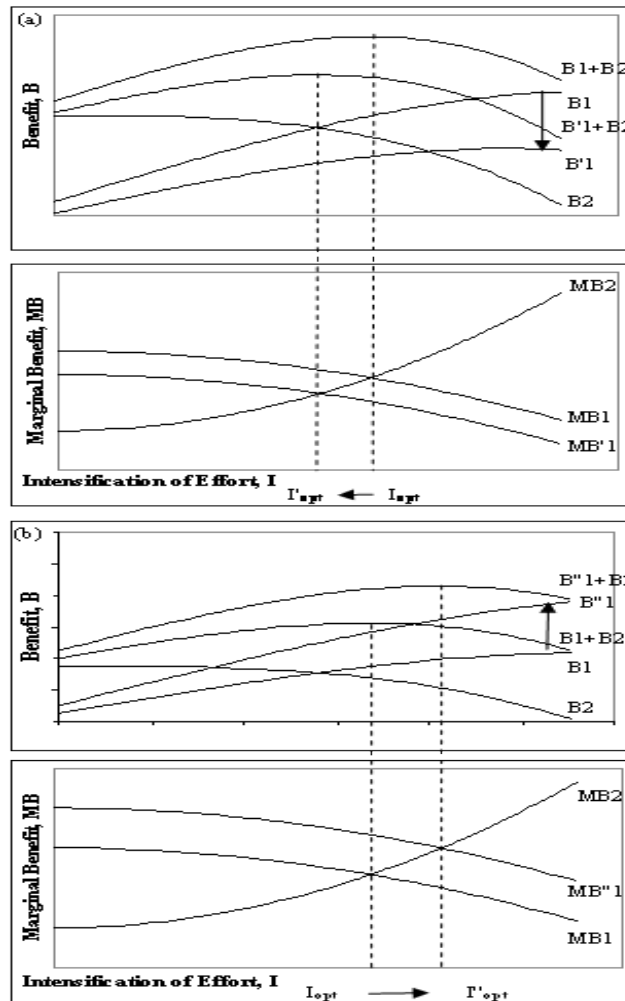


Fuzzy intermediate and final output (shown in the diagrams of events/causes under the codes 1.1.1 & 1.1. and 1, respectively) and input (in the rest diagrams) representing FTA for the branch. The results are given in fuzzy form by the shadowed trapezoids that can be defuzzified to give the crisp numbers/ indices quoted in the text, indicating low/mild influence of the input.



Dependence of partial benefits  $B_1$  and  $B_2$  on intensification of effort  $I$ , and shifting of  $B_1$  (a) in the short and (b) in the long run.

Shifting of  $I_{opt}$  in case we facilitate/ subsidize the participation of public to the corresponding events in order to (i) accelerate information diffusion and (ii) cultivate the respective aesthetic criteria.



# Conclusion

- We have proved that **Experimental Economics** may provide the techniques, which, incorporated within a
- **Fault Tree Synthesis/Analysis (FTS/A)** methodology, are suitable for investigating the difficulties in aesthetic pollution assessment.
- We have also indicated that extended aesthetic pleasure (**EAP**), used as an index of visual externalities, can contribute to the conceptual determination of the **optimal value** of effort intensification and the resources spent ( $I_{opt}$ ) to achieve a certain aesthetic result.

# Conclusion

- According to this analysis,  $I_{opt}$  is decreased in the short run (due to lack of information diffusion, mainly in the public) and increased in the long run, due to knowledge accumulation/transfer/diffusion.
- The methodology presented herein has been successfully implemented in the case of the archaeological site of Elefsina,
- where the corresponding EAP is decreased by the industrial activities taking place in the vicinity, producing atmospheric/visual pollution and changing the original beautiful blue color of the homonymous gulf.